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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BOATENG, ALEXIS ASIEDUA

ART UNIT

PAPER NUMBER

2858

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/516,794	WOBBEN, ALOYS	
	<b>Examiner</b>	<b>Art Unit</b>	
	Alexis Boateng	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1- 3, 5-10, 12, and 19-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1- 3, 5-10, 12, and 19-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 3, 5 - 10, 12 – 14, and 19, 21 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman (WO 92/03869) in view of Gupta (U.S. 5,349,535).

**Regarding claim 1**, Goldman teaches an apparatus for receiving and transporting electrical energy, comprising:

a storage device (figure 1 item 14) formed from a plurality of storage elements (figure 1 item 16; page 6 line 31 – page 7 line 5: both item 14 and 16 are storage elements used to store charged and discharged slurry, respectively); and

a vehicle (figure 1 item 22) having a connection for receiving electrical energy from an external source (figure 1 item 20) and for transmitting electrical energy from the storage device to an external load (figure 1 it item 18), and

Goldman does not disclose a monitoring device configured to monitor a number of charge/discharge cycles for each storage element and output a corresponding notification when a determined number of cycles is reached.

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Gupta discloses in column 5 lines 20 – 29 a monitoring device configured to monitor a number of charge/discharge cycles for each storage element and output a corresponding notification when a determined number of cycles is reached.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Goldman system with the Gupta system so that the battery may not be damaged by excessive charging.

**Regarding claim 2**, Goldman discloses the apparatus as set forth in claim 1 wherein the storage elements comprise accumulators (figure 2 item 44).

**Regarding claim 3**, Goldman discloses the apparatus as set forth in claim 1 wherein the plurality of storage elements are combined to form storage device groups (figure 1 items 14 and 16; page 6 line 31 – page 7 line 5: both item 14 and 16 are storage elements used to store charged and discharged slurry, respectively).

**Regarding claim 5**, Goldman discloses the apparatus of claim 1, further comprising: fixed stations for charging up (figure 2 item 48) and discharging the storage device (figure 1 item 18).

**Regarding claim 6**, Goldman discloses the apparatus of claim 5 wherein the fixed stations comprise:

intermediate storage devices for intermediate storage of the electrical energy (figure 4 item 88).

**Regarding claim 7**, Goldman discloses the apparatus of claim 1, further comprising: at least one electrical collective connection for a plurality of elements (page 8 item 16 - 26).

**Regarding claim 8**, Goldman discloses the apparatus of claim 1, further comprising: at least one opening in each storage element for introducing or draining off a fluid (page 8 lines 16-26)

**Regarding claim 9**, Goldman discloses the apparatus of claim 8 further comprising one or more collecting conduits which connect the openings of the storage elements together (figure 3 item 54).

**Regarding claim 10**, Goldman discloses the apparatus of claim 9 wherein the collecting conduit opens into a container on board the vehicle (figure 4 item 74).

**Regarding claim 12**, Goldman discloses the apparatus as set forth in claim 11 wherein the monitoring device is configured to indicate an operating condition of at least one of individual storage elements or storage device groups (page 10 lines 34 – page 11 line 10).

**Regarding claim 13**, the apparatus of claim 1 wherein the monitoring device is arranged on board the vehicle (page 10 lines 34 – page 11 line 10; metering device monitors the drain of the slurry battery cells, items 218 which are located on the vehicle).

**Regarding claim 14**, Goldman discloses the apparatus of claim 1, but does not disclose wherein the device includes at least a microprocessor and a memory.

Gupta teaches wherein the monitoring device at least a microprocessor and a memory (column 6 lines 54 - 69).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Goldman system with the Gupta system so that battery charge may be monitored to prevent damage

**Regarding claim 19**, Goldman discloses a method a method of storing and transporting electrical energy by means of a vehicle carrying an electrical storage device as a payload, the storage device having a plurality of storage elements, comprising the steps of:

receiving electrical energy from a source external to the vehicle (figure 1 item 10);

charging the storage device with the received electrical energy (page 7 lines 25 – 36);

transporting the vehicle to a destination (page 7 lines 37 – page 8 line 18);

discharging the storage device at the destination (page 7 lines 37 – page 8 line 18);

draining a fluid contained in the storage device after charging of the electrical energy into the storage device but prior to transport of the storage device to the destination (figure 3 item 60);

introducing a fluid into the storage device after transport of the storage device to the destination but prior to removal of the electrical energy fluid (figure 3 item 66).

Goldman does not teach monitoring a number of charge/discharge cycles for each storage element of the storage device; and outputting a corresponding notification when a predetermined number of cycles is reached.

Gupta teaches monitoring a number of charge/discharge cycles for each storage element; and outputting a corresponding notification when a predetermined number of cycles is reached (column 9 lines 39 – column 10 line 19 and column 11 lines 66 – column 12 line 8: charging and discharging the battery is monitored, or charging cycles. Furthermore “records of EACH charge/discharge cycle, including times, rates, and amounts of energy withdrawn and added, peak charge and discharge currents, and other pertinent data. This data could be later downloaded to the remote system for analysis, tracking of pack usage and life, warning of abuses and other purposes.” This data provides notifications. The display provides notifications as status of the charging cycle). At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Goldman art with the Gupta art so that the charge is properly monitored and the information is provided to the user.

**Regarding claim 21**, Goldman discloses the apparatus of claim 1, further comprising:

fixed stations for converting the electrical energy (figure 3 item 60).

**Regarding claim 22**, Goldman discloses the apparatus of claim 1, further comprising:

a device for controlling a charging/discharging operation (figure 2 items 42 and 58).

**Regarding claim 23**, the apparatus of claim 1, further comprising:

a device for supplying or removing fluid (figure 3 item 66 and 60).

**Regarding claim 24**, Goldman discloses the apparatus of claim 1, further comprising

a device for controlling the charging/discharging operation and for supplying or removing fluid (figure 2 items 42 and 58).

**Regarding claim 25**, Goldman discloses a vehicle, comprising:

means for storing electrical energy received from an external source at a first location, wherein the means for storing electrical energy is arranged as a payload for the vehicle (figure 4 item 74) and

means for discharging the stored electrical energy at a second location (page 8 lines 27 – page 9 line 5); and

Goldman does not disclose a monitoring device configured to monitor a number of charge/discharge cycles for each storage element and output a corresponding notification when a determined number of cycles is reached.

Gupta discloses in column 5 lines 20 – 29 a monitoring device configured to monitor a number of charge/discharge cycles for each storage element and output a corresponding notification when a determined number of cycles is reached.



At the time of invention, it would have been obvious to a person of ordinary skill in the art to modify the Goldman system with the Gupta system so that the battery may not be damaged by excessive charging.

**Regarding claim 26**, Goldman discloses the method as set forth in claim 16 further comprising:

cleaning the fluid after removal (figure 4 item 78); and  
storing the cleaned fluid (figure 4 item 88).

**Regarding claim 27**, Goldman discloses the method as set forth in claim 15, wherein transporting the vehicle to a destination comprises removing a container of storage device fluid from the vehicle (figure 1 item 18; page 9 lines 6 - 17: slurry is cleaned then provided to tanks, which may be removed).

**Regarding claim 28**, Goldman discloses the apparatus of claim 1 wherein the storage device is arranged as a payload for the vehicle and in the receiving and transmitting of the electrical energy the storage device remains arranged as a payload for the vehicle (figure 1 item 10 ; page 7 lines 25 – page 8 line 18);

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman (WO 92/03869) in view Okada (U.S. 5,960,898).

**Regarding claim 20**, Goldman discloses the apparatus as set forth in claim 1 wherein the storage elements comprise capacitors. Okada discloses in the abstract wherein capacitors are storage elements within the vehicle. At the time of invention, it would have been obvious to a person of ordinary skill in the art to

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modify the Goldman system with the Okada system to provide a quick charging for the storage elements.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1- 3, 5-10, 12, and 19-28 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexis Boateng whose telephone number is (571) 272-5979. The examiner can normally be reached on 8:30 am - 6:00 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AB

/MELISSA J KOVAL/  
Supervisory Patent Examiner, Art Unit 2858